

Claims:

- 1 1. A system for a magnetic head arm assembly (HAA) comprising:
  - 2 a first component having a first cavity to be coupled to an arm portion having an arm
  - 3 cavity via a pin element welded between said first component and said arm portion, wherein
  - 4 said first component is selected from the group consisting of a head suspension portion
  - 5 and a flex cable portion.
- 1 2. The system of claim 1, wherein said head suspension portion is a hard disk drive head
- 2 gimbal assembly (HGA).
- 1 3. The system of claim 1, wherein said flex cable portion is a hard disk drive flex cable.
- 1 4. The system of claim 1, wherein said arm portion is a hard disk drive arm.
- 1 5. The system of claim 1, wherein said pin element is a copper welding pin.
- 1 6. The system of claim 1, wherein said pin element is inserted into said first cavity and into
- 2 said arm cavity and said pin element to couple said first component to said arm portion.
- 1 7. The system of claim 6, wherein said pin element is cylindrical; said first cavity is a
- 2 circular hole with a diameter enabling insertion of said pin element; and said arm cavity is a
- 3 circular recession with a diameter enabling insertion of said pin element.

1 8. The system of claim 6, wherein said pin element has a rectangular cross-section; said first  
2 cavity is a rectangular opening with a size enabling insertion of said pin element; and said arm  
3 cavity is a rectangular recession with a size enabling insertion of said pin element.

1 9. The system of claim 6, wherein said pin element is interference fitted into said arm cavity  
2 and said pin element is soldered to first component to couple said first component to said arm  
3 portion.

1 10. A method for a magnetic head arm assembly (HAA) comprising:  
2 coupling a first component having a first cavity to an arm portion having an arm cavity  
3 via a pin element welded between said first component and said arm portion, wherein  
4 said first component is selected from the group consisting of a head suspension portion  
5 and a flex cable portion.

1 11. The method of claim 10, wherein said head suspension portion is a hard disk drive head  
2 gimbal assembly (HGA).

1 12. The method of claim 10, wherein said flex cable portion is a hard disk drive flex cable.

1 13. The method of claim 10, wherein said arm portion is a hard disk drive arm.

1 14. The method of claim 10, wherein said pin element is a copper welding pin.

1 15. The method of claim 10, wherein said pin element is inserted into said first cavity and  
2 into said arm cavity and said pin element to couple said first component to said arm portion.

1 16. The method of claim 15, wherein said pin element is cylindrical; said first cavity is a  
2 circular hole with a diameter enabling insertion of said pin element; and said arm cavity is a  
3 circular recession with a diameter enabling insertion of said pin element.

1 17. The method of claim 15, wherein said pin element has a rectangular cross-section; said  
2 first cavity is a rectangular opening with a size enabling insertion of said pin element; and said  
3 arm cavity is a rectangular recession with a size enabling insertion of said pin element.

1 18. The method of claim 15, wherein said pin element is interference fitted into said arm  
2 cavity and said pin element is soldered to first component to couple said first component to said  
3 arm portion.

1 19. A system for a magnetic head arm assembly (HAA) comprising:  
2 a first component to be coupled to a second component via welding said first component  
3 to said second component, wherein  
4 said first component is selected from the group consisting of a head suspension portion, a  
5 flex cable portion, and a flex circuit portion.  
6 said second component is an arm portion.

1 20. The system of claim 19, wherein said first component is a hard disk drive slider frame  
2 and said second component is selected from a group consisting of a hard disk drive head gimbal  
3 assembly (HGA) and a hard disk drive slider.

1 21. The system of claim 19, wherein said head suspension portion is a hard disk drive head  
2 gimbal assembly (HGA).

1 22. The system of claim 19, wherein said flex cable portion is a hard disk drive flex cable.

1 23. The system of claim 19, wherein said flex circuit portion is a hard disk drive bridge flex  
2 circuit (BFC).

1 24. The system of claim 19, wherein said arm portion is a hard disk drive arm.

1 25. The system of claim 19, wherein said first component is coupled to said second  
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder  
3 bump welding, and laser welding.

1 26. The system of claim 20, wherein said first component is coupled to said second  
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder  
3 bump welding, and laser welding.

1 27. A method for a magnetic head arm assembly (HAA) comprising:  
2 welding a first component to a second component, wherein  
3 said first component is selected from the group consisting of a head suspension portion, a  
4 flex cable portion, and a flex circuit portion.  
5 said second component is an arm portion.

1 28. The method of claim 27, wherein said first component is a hard disk drive slider frame  
2 and said second component is selected from a group consisting of a hard disk drive head gimbal  
3 assembly (HGA) and a hard disk drive slider.

1 29. The method of claim 27, wherein said head suspension portion is a hard disk drive head  
2 gimbal assembly (HGA).

1 30. The method of claim 27, wherein said flex cable portion is a hard disk drive flex cable,  
2 said flex circuit portion is a hard disk drive bridge flex circuit (BFC), and said arm portion is a  
3 hard disk drive arm.

1 31. The method of claim 27, wherein said first component is coupled to said second  
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder  
3 bump welding, and laser welding.

- 1 32. The method of claim 28, wherein said first component is coupled to said second  
2 component via a type of welding selected for the group consisting of ultrasonic welding, solder  
3 bump welding, and laser welding.